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TYT

# TH-2R PROFESSIONAL FM TRANSCEIVER

**COMP**

Entire frequency channel
108 memory channels

**CTCSS/DCS**

- 1750Hz tone
- Scrambler
- COMP functions
- Emergency alert
- VOX function
- Keypad lock
- Side-key operation
- Channel name editing
- PC programming and Battery charging are compatible

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## USER'S MANUAL

# TO CUSTOMERS

Thank you very much for using our two way radio. This radio of modern design is reasonable structure with stable functions. It is designed to meet different customers' need for high quality with easy operation and perfect capablity. We believe you are pleased with its nice shape and excellent performance.
This manual is suitable for using the model of TH-2R.

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Welcome to use TYT two-way radio

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## Main functions

- Compact and easy to operate
- Chinese and English voice prompt
- Voice scrambler
- Emergency alert
- COMP function
- Channel name editing
- Dual watching function
- VOX function
- CTCSS/DCS scanning
- Wide/narrow bandwidth selectable
- Full frequency range design
- Wide frequency coverage
- 1750Hz tone
- Battery capacity management
- Power protection function
- Programmable multifunction key
- FM radio and 25 radio stations memory
- PC programming and battery charging are compatible

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# USING TIPS

## UNPACKING AND CHECKING EQUIPMENT

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## USING TIPS

Please read the following brief instructions, non-compliance with these rules may cause danger or violate the law.

- Obey the local government regulation before using this radio, improper use may violate the law and be punished.
- Turn off the radio before entering flammable or explosive areas.
- Do not charge or change the battery in flammable or explosive areas.
- Turn off the radio before getting close to the blasting zone or detonator areas.
- Do not use radio whose antenna is damaged, touching of damaged antenna will cause heat injury.
- Do not attempt to open the radio; the maintenance work should be done by technical expert only.
- To avoid troubles caused by electromagnetic interference or electromagnetic compatibility, please turn off the radio in places where have the banner "Do not use wireless equipment", such as hospital and other healthcare places.
- In the car with an airbag, do not put the radio within the scope of the airbag deployment.
- Do not store the radio under the direct sunshine or in hot areas.
- When you transmit with the radio, do keep away from its antenna for 5cm at least.
- If the radio appears smelly or smoke, please shut off its power immediately and contact with your local dealer.
- Do not transmit too long, for the radio may heat and hurt the user.



## UNPACKING AND CHECKING EQUIPMENT

Welcome to use TYT TH-2R transceiver. Please check if any damage to the package when your receive it. Carefully unpack the transceiver. We recommend that you check the items listed in the following table. If any items are missing or damaged during shipment, please contact with your local dealer immediately.

Supplied Accessories:

TH-2R Body (1)

Antenna (1)

Li-ion battery (1)

Power Adapter (1)

Charger (1)

Handstrap (1)

Belt Clip (1)

Verification (1)

Headset case

User's Manual (1)

**Note:** The antenna frequency range please refers to the annular label at the bottom of antenna.



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# CHARGING BATTERY PACK

# INSTALATION OF ACCESSORIES

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## Charging Precaution

The supplied battery pack of TH-2R is a high-performance Li-ion battery with 3.7V standard voltage,1300mAh high capacity in a very compact package. Under normal use, the battery pack may be used for approximately 500 charge cycles and more, after which operating time maybe expected to decrease. If you have an old battery pack which is displaying capacity which has become diminished, you should replace the pack with a new one.

Please use TYT designated battery; other batteries can cause explosion and hurt people.

Notice:
- Please do not short-circuit the battery terminals or expose of in fire. Do not disassemble the battery unauthorized.
- Charge the battery between temperature 0℃ and 45℃. The battery can not be normally charged beyond this temperature range.
- Please turn off the transceiver when you charge it. Transmitting with the transceiver in charge will affect its normal charge.
- Do not unplug the Power Adapter or battery when it is charged.
- If the battery pack lasts shortly even it is full of power, it shows that the battery is depleted, please change the battery pack.
- Please do not charge when the battery or the radio is wet. Please dry it with a cloth before charging to avoid any danger.

**Warning:** When the conductive metals such as jewelery, key or decorative chains touch the battery terminals, all the batteries are likely to cause damage to the items or personal



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injury. These conductive metals may form a short circuit and generates much heat. Do deal with any battery carefully, especially when put it into pocket, wallet or other metallic containers.

## Charging Operation

After installing the battery pack, if the battery icon shows ⊂⊃, it means that the battery pack is out of power, Please charge it.

1) Normal Charging

Turn off the transceiver. Remove the battery pack out and put it into the charger. Connect Power Adapter to the charger. If the charger indicator light turns red, it is charging normally. When the charger light turns to green after charging is completed, remove the Power Adapter first then get out of the battery pack.It is full with power now.

**Note:**
- It is abnormal in case of the charger blinking before sliding the battery pack into the charger.
- If the indicator light is blinking after sliding the battery pack into the charger, maybe the battery pack is damaged or over environment temperature.
- Dont remove the battery pack until the charger indicator light is stable.

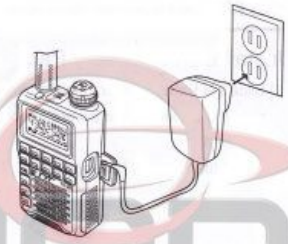
2) Using Power Adapter

If you forget the charger and only have Power Adapter, you can use Power Adapter to charge the TH-2R directly, as shown in the illustration to EXT DC jack.



3) Using Program Cable

If you have program cable and PC, that will be more convenient to connect the transceiver to the PC and get charging. That's TH-2R new feature and will give you great convenience.



Both method 2 and 3 can see the charging situation through battery capacity indicator icon on the radio.

Indicator light of charger will show charging condition

| Indicator Icon | Situation |
|---|---|
| blinks | Charging |
| is full | Completed |

Battery Tips:
- The battery is not fully charged in factory, please charge before using it.
- Charge and discharge the battery for two or three times, the battery capacity will reach the best condition. When the battery capacity is low, please charge or change the battery.
- The battery lasts shortly even if it is fully charged, the battery is depleted, please contact your local dealer to buy a new authentic TYT battery.



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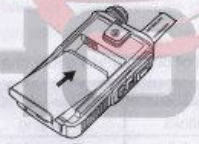
## INSTALLATION OF ACCESSORIES

### Installation of Battery Pack

1) Slide the Battery Cover Latch to Unlock position---in direction of the arrowhead ①, then slide the Battery Cover toward the bottom to remove it out---in direction of arrowhead②. Picture 1

2) Install the supplied battery pack into Battery Compartment correctly. Picture 2

Picture 1



Picture 2

3) Return Battery Cover back and slide the Battery Cover Latch to the Lock position. Picture 3

Picture 3



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## Antenna Installation

The supplied antenna provides good results over VHF or UHF range of the transceiver you need. However, for enhanced base station medium-wave and shortwave reception, you may wish to connect an external antenna, as the supplied antenna is very small and can't be expected to provide high performance at these frequencies.

The antenna has 4 different frequency bands.

To install the supplied antenna, hold the bottom end of the antenna, then screw it onto the connector on the transceiver until it is snug. Do not over-tighten by use of extreme force.

Picture 4

To uninstall the antenna, hold the bottom end of it and turn it counterclockwise to remove it.

Picture 5

Picture 4

Picture 5



Notes: ■ Never transmit without having an antenna connected.

■ When installing the supplied antenna, never hold the upper part of the antenna while screwing it onto the connector on the transceiver. Or you may snap the antenna.

## Installing Belt Clip

Align the two holds of belt clip and the two holes of the radios, fix them with the supplied M2.5x5 screws. Loosen the screw set to remove belt clip.

Picture 6

Picture 6



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## Installing External Micro/Speaker

Open the cover of the Mic/speaker jack and insert the microphone/speaker plugs into the jack. Picture 7

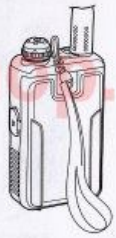
**Note:**
- Using the external headset or Mic/speaker will affect the water-tightness performance of radio.
- If the external headset is not workable, please use the headset case.
- If you want to use the VOX function, please use the common headset.

Picture 7

## Wrist Strap Installation

Wear strap through the hole on the back of radio.

Picture 8



Picture 8





# RADIO ILLUSTRATION

# LCD DISPLAY

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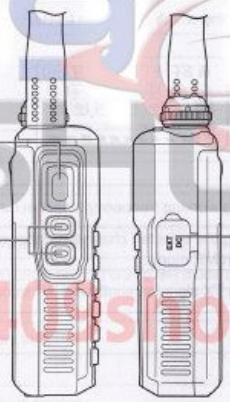
## RADIO ILLUSTRATION



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## LCD DISPLAY

You will see various icons shown on the screen when power on. The following table can help you identify icons' meaning which display on LCD.

| | |
|---|---|
| 888888 | Displaying working frequency, channel number or function menu |
| 888 | Displaying the selected channel number or function menu when the radio is on MR mode. |
| | Indicating TX signal strength and RX signal strength |



| Icons | Description of functions |
|---|---|
| | Keypad lock |
| 888 | Current working channel number in MR mode |
| | Auto power off |
| | Beep tone |
| | Minus shift |
| | Plus shift |
| CT | CTCSS |
| DT | DCS |
| F | Function menu for selecting |
| DW | Monitor the signal under both VFO and MR mode at the same time |
| LOW | Low power |
| SAVE | Battery save function |
| VOX | VOX function |
| | Battery capacity indicator |
| FM | FM radio ON/OFF |



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WORKING MODE

BASIC OPERATION

SHORTCUT OPERATION

NUMBER KEY OPERATION

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## WORKING MODE

Ⅰ. Frequency Mode(VFO)

Under this mode, you can use POWER/DIAL knob to change the frequency or input the frequency by keypad directly.

Ⅱ. Frequency-Memory Channel Mode(MR)

When you have stored a memory channel at least and under VFO mode, press [ MR ] key to enter MR mode.

The frequency will be indicated on the display and the channel No. will be indicated at the right top. If the transceiver display mode option is "NAME", it will show the name of the channel. Please see Menu Operation ITEM 15.Page 36

Ⅲ. Channel Mode(CH)

When you have stored a memory channel at least, press [ MR ] key and switch power on the radio, enter CH mode. Channel No. will be indicated on the display and if the transceiver display mode option is "NAME", it will show the name of the channel. Pls see Menu Operation ITEM 15.Page 36

Ⅳ. FM Radio Mode

TH-2R provides frequency 76.00-108.00MHz FM radio.

Under this mode, you can choose the FM frequency you need directly. Scan frequency range and store your favorite channels, please see Shortcut Operation ITEM 8.Page 25



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V. MENU Mode

Press [ ] key + [ ] key to enter MENU mode, there are 20 items in total. Please see MENU OPERATION.Page 30-31

## BASIC OPERATION

I. Switching Power On And Off

1. Be sure the battery pack is installed and connect the antenna correctly.
2. Press and hold POWER/DIAL knob for 3 seconds, a "POWER ON" voice will be heard , the current voltage will indicated on the display, then the display will resume its normal indication of the operating frequency.
3. To turn off the TH-2R, press and hold POWER/DIAL again for 3 seconds.

**Note:** If you dont hear the "POWER ON" voice when the radio power on, the Beep function may have been disabled via Shortcut Operation ITEM 9. Page 25

II. Frequency Adjustment

The TH-2R will be operating in the VFO mode, a channelized system which allows free tuning throughout the operating band.

Rotation of the POWER/DIAL knob allows turning in the pre-programmed steps established for the operating band. Clockwise rotation of the DIAL causes it toward a higher frequency, while counter-clockwise rotation will toward lower frequency.



III. Transmission

1. Press PTT switch, and speak into the front panel microphone in a normal voice level. The BUSY/TX indicator will turn red during transmission.
   Release PTT switch to return to the receive mode.
2. During transmission, the relative power level will be indicated at the bottom of the LCD. Full scale deflection confirms "High Power" and deflection of four bars indicates "Low Power". Also "Low" icon will appear at the bottom of the display while operating on the "Low Power" setting Shortcut Operation ITEM 2. Page 24

IV. Keypad Lock

In order to prevent accidental frequency change or inadvertent transmission, the TH-2R provides KEYPAD LOCK function, you can activate it by Manual or Auto activates it. Please see Menu Operation ITEM 17. Page 37

1. Press [ ] key + [ ] key to enter MENU mode.
2. Rotate the POWER/DIAL knob to select ITEM 17:KEY LK
3. Press [ ] key to enable adjustment of this function.
4. Rotate the POWER/DIAL knob to choose between Manual and Auto.
5. When you have made your selection, press [ ] key to save the new setting and return to MENU mode.

Note: ■ When you choose Auto Keypad Lock, the keypad will be locked automatically after the transceiver is under standby mode and without operation for 5 seconds.



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- When you choose Manual Keypad Lock, press [ F/M ] key to lock the keypad.
- When the keypad is locked, the [ 🔒 ] icon will be indicated on the top of LCD.
- Press [ F/M ] key again for 3 seconds to unlock it.

## V. Multifunction side key operation

The TH-2R provides two multifunction side keys for you. Both of them have the same options.

And you can set their function via program software according to your requirement.

There are six different options as below:

A. None

B. Monitor and volume adjustment:

When you set this function to the side key, press and hold it, the transceiver will be into Monitor state and talking volume will be indicated on the LCD. Rotate the POWER/DIAL knob to adjust it as your need.

C. Voltage display

D. Tone Calling (1750Hz)

If the repeaters in your country require a 1750Hz burst tone for access (typically in Europe),you can set the side key to serve as a T-Call key.

To access a repeater,press and hold in T-Call key for the amount of time specified by the repeater.The transmitter will automatically be activated,and a 1750Hz audio tone will be superimposed on the carrier.Once access to the repeater has been gained,you may release T-Call key and use PTT for activating the transmission.



E. Emergency Alarm-1

Press it to start emergency alarm,then if press PTT to transmit 55Hz alarm signal, your remote partner with the same frequency will be also on emergency alarm.If not,only your own TH-2R is on emergency alarm.Press it again to stop the alarm.This is suitable for short distance talking,others can hear your emergency alarm clearly.

F. Emergency Alarm-2

Press it to start emergency alarm and transmit 55Hz alarm signal directly and your remote partner's transceiver will be on emergency alarm.Release it and stop the alarm.This is suitable for long distance talking,such as outdoor playing…etc.

## VI. Reset Operation

Press [ F/M ] key and switch power on, then press [ INT ] key to enter reset mode.

1. Rotate the DIAL knob to select VFO/FULL.
2. VFO: initialize all setting under frequency mode.
3. FULL: initialize all setting under frequency and memory channel mode.



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## SHORTCUT OPERATION

The users can operate the TH-2R rapidly via [ F/S ] + other keys. Details are as below.

1) Squelch grade setting(F+1)

Press [ F/S ] key + number key [ 1 ] key to enter squelch grade setting:0~9 grades. Rotate the DIAL knob to adjust it.

2) High/Low power setting(F+2)

Press [ F/S ] key + number key [ 2 ] key to enter High/Low power setting. Rotate the DIAL knob to adjust and when you select Low power, a "LOW" icon will appear at the bottom of the LCD.

3) Priority scan setting(F+3)

Press [ F/S ] key + number key [ 3 ] key to enter priority scan setting. Note that this function is only available under MR and CH mode.

4) Shift offset direction setting(F+4)

Press [ F/S ] key + number key [ 4 ] key to enter Shift offset direction setting under VFO mode. Rotate the DIAL knob to choose downward (-) or upward (+).And one of these icons will appear at the top of the LCD when repeater shifts have been enabled.

5) Frequency reverse setting(F+5)

Press [ F/S ] key + number key [ 5 ] key to enter frequency reverse setting. Note that this function is only available under VFO mode.



6) Channel spacing step setting(F+6)

Press [ F/S ] key + number key [ 6 ] to enter frequency step setting. Rotate the DIAL knob to select 6.25/12.5/25.0/50.0/100.0KHz.

7) VOX switch on/off setting(F+7)

Press [ F/S ] key + number key [ 7 ] to enter VOX switch on/off setting. Rotate the DIAL knob to select ON/OFF.

Regarding VOX level setting please see MENU OPERATION ITEM 18.Page 37.

8) FM radio mode(F+8)

Press [ F/S ] key + number key [ 8 ] to enter FM radio mode. A FM icon will appear on the bottom of the LCD.

Rotate the DIAL knob to select FM frequency or directly input the frequency by keypad. FM radio frequency range is 76.00~108.00MHz.Press [ F/S ] key + number key [ 8 ] again to exit.

Under FM Radio mode,TH-2R can monitor the receiver signals. When there is a call, TH-2R will exit FM radio mode temporarily and receive the call. After finishing the call for 5 seconds, return back FM radio mode automatically.

9) Keypad beeper setting.(F+9)

Press [ F/S ] key + number key [ 9 ] to enter keypad beeper setting. Rotate the DIAL knob to select OFF/TONE/VOICE.

10) CTCSS/DCS setting(F+0)

Press [ F/S ] key + number key [ 0 ] to enter CTCSS/DCS setting.



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1. Switch between RX and TX via [ F/■ ] key.
2. Switch between CTCSS and DCS via [ MO ] key.
   OFF->CTCSS->DCS N->DCS I->OFF
3. Rotate the DIAL knob to select CTCSS/DCS.
4. Press [ ENT ] key to confirm and [ MR ] to exit.

11) Scanning function(F+VFO)

Press [ F/■ ] key + [ VFO ] key to start scanning function. Rotate the DIAL knob to change scanning direction. You can scan under VFO, MR and CH mode as your requirement.

12) Channel Storage(F+MR)

Press [ F/■ ] key + [ MR ] key to store the channels you desired, and you can input the channel number via keypad directly. Rotate the DIAL knob to select channel number and press [ ENT ] key to store.

13) Menu mode(F+ENT)

Press [ F/■ ] key+ [ ENT ] key to enter menu mode. Pls see Menu Operation. Page 30

## NUMBER KEY OPERATION

Under VFO mode, you can select the frequency by number key directly. If the input number is out of band, it will prompt "ERROR". If you input frequency is available, the transceiver will enter your desired frequency. Under channel mode, press number key to change the current channel.





SET MENU MODE
MENU OPERATION
DESCRIPTION AND SETTING OF OPERATION MENU
TECHNICAL PARAMETERS
GUARANTEE

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## SET MENU MODE

| Set Menu Mode | Icon and Function | Available Values |
|---|---|---|
| 1 | SCRM (Scrambler) | ON/OFF |
| 2 | COMP (Compound) | ON/OFF |
| 3 | W-N (Wide/Narrow Bandwidth Selectable) | WIDE/NARROW |
| 4 | STE (End-tone Elimination) | ON/OFF |
| 5 | DIFFER (Offset Frequency) | 00.000-70.000MHz |
| 6 | SCAN (Scan Added) | ADD/DEL |
| 7 | PRICH (Priority Scan Channel) | CHANNEL NO |
| 8 | NAME (Channel Name Setting) | Name with 6 characters |
| 9 | DW (Dual Watching) | ON/OFF |
| 10 | LAMP (Backlight Setting) | OFF/AUTO/ON |
| 11 | SCANS (Scan Mode) | TO/CO/SE |
| 12 | TOT (Time Out Timer) | OFF, 15S-600S |
| 13 | SAVE (RX Power Saving) | OFF/1-1/1-2/1-3/1-4 |
| 14 | APO (Auto Power Off) | OFF/30mins/60mins/90mins/ 120mins/150mins/180mins |
| 15 | S MODE (Channel Name Displaying Mode) | FREQ/ALPHA |
| 16 | ACPALT (Emergency Alert) | ON/OFF |
| 17 | KEY LK (Keypad Lockl Setting) | AUTO/MANUAL |



| Set Menu Mode | Icon and Function | Available Values |
|---|---|---|
| 18 | VOX S (VOX Sensitivity) | 1-9 |
| 19 | SK CTS (CTCSS) Scan | 67.0/69.3/71.9/74.4... |
| 20 | SK DCS (DCS Scan) | D017N/D023N/D025N... |



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## MENU OPERATION

Press [ F/B ] key, "F" will be indicated at the left bottom of the LCD, and then press [ ENT ] key, LCD displays "MENU" to enter menu mode. Rotate encoder key to select the menu items, then press [ ENT ] key to enter the desired menu. Rotate encoder key to select the desired one, then press [ ENT ] key to confirm. During operation, press [ ESC ] key to exit and back to the last menu, press [ ESC ] key to exit menu mode.



## DESCRIPTION AND SETTING OF FUNCTION MENU

1) Scrambler (SCRM)

Press [ F/B ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 1, LCD displays "SCRM" , press [ ENT ] to turn on or off the scrambler, press PTT or [ ENT ] key to confirm then press [ ESC ] key to exit. When this function is on, TX voice will be sent out with scrambler, other radio can only receive the signal when its scrambler also turns on.

**OFF:** Scrambler turns off

**ON:** Scrambler turns on

2) Compander (COMP)

Press [ F/B ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 2, LCD displays"COMP" , press [ ENT ] to turns on or off the Compander, press PTT or [ ENT ] key to confirm then press [ ESC ] key to exit. When Compander is on, it will greatly reduce the noise and make the communication more smoothly.

**OFF:** Compander turns off

**ON:** Compander turns on

3) Wide/narrow bandwidth selectable (W-N)

Press [ F/B ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 3, LCD displays "W-N" , press [ ENT ] to select "WIDE" or "NARROW", press PTT or [ ENT ] key to confirm then press [ ESC ] key to exit.

**"WIDE" :** Wide bandwidth is selected.



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**"NARROW" :** Narrow bandwidth is selected.

4) End-tone elimination (STE)

Press [ F/M ] , and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 4, LCD displays "STE" , press [ ENT ] to turn it on or off, press PTT or [ ENT ] key to confirm then press [ MR ] key to exit. It can eliminate nasty sound when transmission is finished. The benefit of this function is particularly evident for those using earphone.

**Note:** This function will only activate when other radios also turn on STE function.

5) Offset frequency (DIFFER)

Press [ F/M ] , and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 5, LCD displays "DIFFER" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select the differ frequency from 00.000MHz-70.000MHz. Press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

6) Scan added (SCAN)

Press [ F/M ] , and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 6,LCD displays "SACN" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select "ADD" or "DEL". Press PTT or [ ENT ] key to confirm then press [ MR ] key to exit. This function is only available under channel mode in order to add scan function into the current channel.

**"ADD" :** scan added

**"DEL" :** Scan deleted

7) Priority channel scan (PRICH)



This function is only available under channel mode and permits you to scan the channels used frequently. Press [ F/M ] ,and then press [ ENT ] key,rotate the POWER/DIAL knob key to select Menu 6, LCD displays "PRICH" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select the desired channels. Press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

8) Channel name setting (NAME)

Channel name can be edited by users, 6 digits or letters in maximum, this function is only available under channel mode.Under CH and MR mode, press [ F/M ] , and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 8, LCD displays "NAME" , press [ ENT ] to enter, the first digit blinks on the screen, rotate the POWER/DIAL knob key to choose from "0" - "9" and "A" - "Z" , press [ VFO ] key to switch to next character, press [ MR ] key to back to last character, then press [ ENT ] key to confirm the setting

9) Dual Watching(DW)

TH-2R could monitor the signal under both VFO mode and MR mode at the same time. Press [ F/M ] , and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 09,LCD displays "DW" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select "ON" or "OFF" , press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

**ON:** DW is on

**OFF:** DW is off



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10) Backlight setting (LAMP)

Press [ FUN ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 10, LCD displays "LAMP" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select the mode, press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

**ON:** LCD backlight will be turned on constantly

**OFF:** LCD backlight will be turned off constantly

**AUTO:** Keypad and LCD backlight will be turned on upon any operation, and stay for 5 seconds. It will be automatically turned off when there is not any operation.

11) Scan mode selecting(SCANS)

Press [ FUN ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 11, LCD displays "SCANS" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select scan mode, press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

a. Time-operated scan(TO)

The radio will stop scanning if there is signal and stay for 5S. it will continue scanning even the signals still exists.

b. Carrier-operated scan(CO)

The radio will stop scanning if there is signal and stay in the same frequency till the signal disappears. Before the radio begins scan again, there will be 15S for the radio to transmit and receive.



c. Search scan(SE)

The radio will stop scanning if there is signal and stay in the same frequency, and then exits.

12) Time out timer(TOT)

To prevent radio from being damaged due to continue transmission for a long time, the radio will alert you when transmission time limit is up.

A transmitting time can be selected: OFF, 15S, 30S, 45S, 60S, 75S, 90S, 105S, 120S, 135S, 150S, 165S, 180S, 195S, 210S, 225S, 240S, 255S, 270S, 285S, 300S, 315S, 330S, 345S, 360S, 375S, 390S, 405S, 420S, 435S, 450S, 465S, 480S, 495S, 510S, 525S, 540S, 555S, 570S, 585S, 600S.

Press [ FUN ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 12, LCD displays "TOT" , press [ ENT ] to enter and rotate the POWER/DIAL key to select the time, press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

13) RX power saving(SAVE)

Press [ FUN ], and then press [ ENT ] key , rotate the POWER/DIAL knob key to select Menu 13, LCD displays "SAVE" , press [ ENT ] to enter and rotate the POWER/DIAL knob key to select the time, press PTT or [ ENT ] key to confirm then press [ MR ] key to exit.

**OFF:** RX power saving function is off

Level: 1:1, 1:2, 1:3, 1:4, the higher the level, the better the performance of RX power saving.

14) Auto power off (APO)



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Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 14, LCD displays "APO" , press [ ] to enter and rotate the POWER/DIAL knob key to select the tome, press PTT or [ ] key to confirm then press [ ] key to exit. If APO is on, The radio will be turned off when there is no operation within the pre-determined time.

**OFF:** APO is off

30MIN, 60MIN, 90MIN, 120MIN, 150MIN, 180MIN mean that the radio will turn off when there is no operation after these pre-determined time.

15) LCD display mode (SMODE)

Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 16, LCD displays "S MODE" , press [ ] to enter and rotate the POWER/DIAL knob key to select "NAME" or "FREQ", press PTT or [ ] key to confirm then press [ ] key to exit.

**NAME:** displaying your edited channel name

**FREQ:** displaying frequency

16) Emergency alert receiving (ACPALT)

Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 16, LCD displays "ACPALT" , press [ ] to enter and rotate the POWER/DIAL knob key to select "ON" or "OFF", press PTT or [ ] key to confirm then press [ ] key to exit.

**OFF:** won't receive the emergency alert

**ON:** receive the emergency alert



17) Lock mode (KEYLK)

Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 17, LCD displays "KEY LK" , press [ ] to enter and rotate the POWER/DIAL knob key to select "AUTO" or "MANUAL", press PTT or [ ] key to confirm then press [ ] key to exit.

**AUTO:** radio will be locked automatically if there is not any operation within 8S.

**MANUTO:** long press [ ] for 2S to lock the keypad.

18) VOX level setting (VOXLV)

VOX sensibility can be adjusted by setting VOX level, Level 1 is the lowest, so it needs the strongest voice.

19) CTCSS scanning (SK CTS)

Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 19, LCD displays "SK CTS" , press [ ] to begin scanning, press PTT or [ ] key to confirm then press [ ] key to exit. The radio will stop scanning when a same CTCSS code of other radios is received., and CTCSS code blinks. Rotate the POWER/DIAL knob key to changescanning direction.

20) DCS scanning (SK DCS)

Press [ ] , and then press [ ] key , rotate the POWER/DIAL knob key to select Menu 20, LCD displays "SK DCS" , press [ ] to begin scanning, press PTT or [ ] key to confirm then press [ ] key to exit. The radio will stop scanning when a same CTCSS code of other radios is received and DCS code blinks.

Rotate the POWER/DIAL knob key to change scanning direction.



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## TECHNICAL PARAMETERS

| | |
|---|---|
| Item number | TH-2R |
| **General** | |
| Frequency Range | 136-174MHz/200-260MHz/ 245-246MHz/320-400MHz/ 400-470MHz/400-520MHz |
| Channel No. | 108 |
| Antenna | High gain antenna |
| Antenna Impedance | 50Ω |
| Operating Voltage | DC 3.7V(Rechargeable Li-ion battery) |
| Mode of operation | Simplex |
| Dimensions (WxHxD) | 84x48x26mm |
| **Transmitter** | |
| Output power | ≤2.5W(H) ≤0.8W(L) |
| Modulation Mode | F3E |
| Maximum deviation | <5kHz/<2.5KHZ |
| Spurious Radiation | <7μW |
| Adjacent Ch. power | ≥65dB/≥60db |
| Pre-emphasis characteristics | 6db |
| Current | ≤1.5A |



| | |
|---|---|
| CTCSS/DCS deviation | 0.5kHZ+/±.01kHZ 03kHZ+/±0.1kHZ |
| Intermediation sensitivity | 8-12mv |
| Intermediation distortion | <5% |
| **Receiver** | |
| RF Sensitivity | -122dbm(12db SINAD) |
| Audio power | 1W |
| Audio Distortion | ≤10% |
| Intermediation | ≥60dB ≥55db |
| Selectivity | ≥65dB ≥60db |
| Spurious Rejection | ≥65db |
| Blocking | ≥85dB |



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